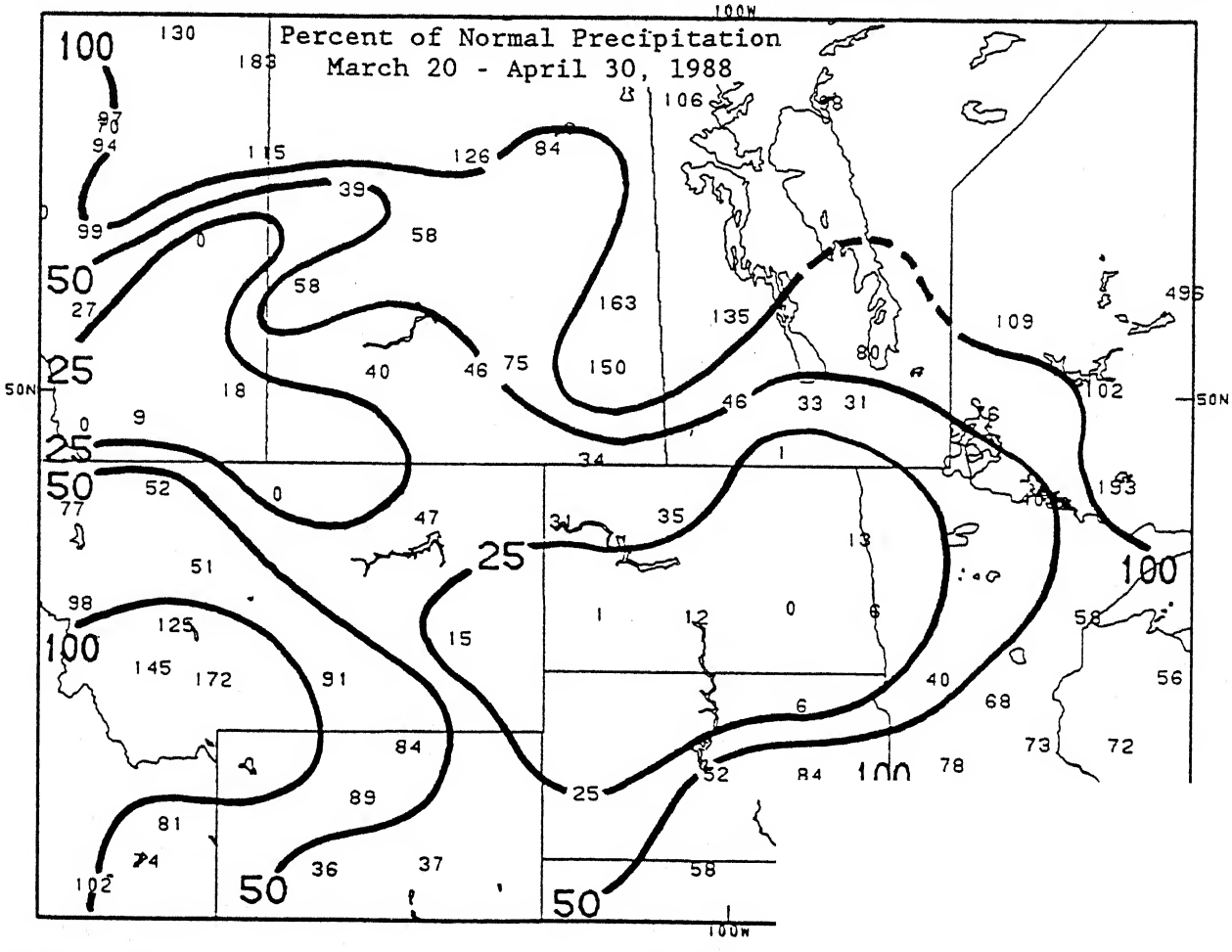
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

No. 88/18 Washington, DC April 30, 1988



PRECIPITATION NORMALLY INCREASES IN THE SPRING ANI
SUMMER MONTHS IN THE NORTHERN GREAT PLAINS, UPPER
SO FAR THIS SPRING, HOWEVER, PRECIPITATION HAS BE
MOST OF THE AREA AS THE GROWING SEASON GETS UND
CLIMATE SUMMARY FOR FURTHER DETAILS.

NOAA - NATIONAL WEATHER SERVICE - NATIO

WEEKLY CLIMATE BULLETIN

Editor:	David Miskus
Associate Editor:	Paul Sabol
Contributors:	Keith W. Johnson
	Vernon L. Patterson
Graphics:	Robert H. Churchill

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

Highlights of major global climatic events and anomalies.
U.S. climatic conditions for the previous week.
U.S. apparent temperatures (summer) or wind chill (winter).
Global two-week temperature anomalies.
Global four-week precipitation anomalies.
Global monthly temperature and precipitation anomalies.
Global three-month precipitation anomalies (once a month).
Global twelve-month precipitation anomalies (every 3 months).
Global temperature anomalies for winter and summer seasons.
Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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Climate Analysis Center, W/NMC53
Attention: Weekly Climate Bulletin
NOAA, National Weather Service
Washington, DC 20233
Phone: (301)-763-8071

GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF APRIL 30, 1988
(Approximate duration of anomalies is in brackets.)

1. North Central U.S.A. and South Central Canada:
UNUSUALLY DRY CONDITIONS PREVAIL.
Little or no precipitation was recorded in northern Minnesota, North Dakota, Montana, Alberta, Saskatchewan, and Manitoba where dryness remains (See Special Summary) [7 weeks].

2. Northeastern United States:
BELOW NORMAL TEMPERATURES PERSIST.
Temperatures remained as much as 5.3°C (9.5°F) below normal from Illinois to New York and Pennsylvania as a cold Canadian air mass dominated the region [3 weeks].

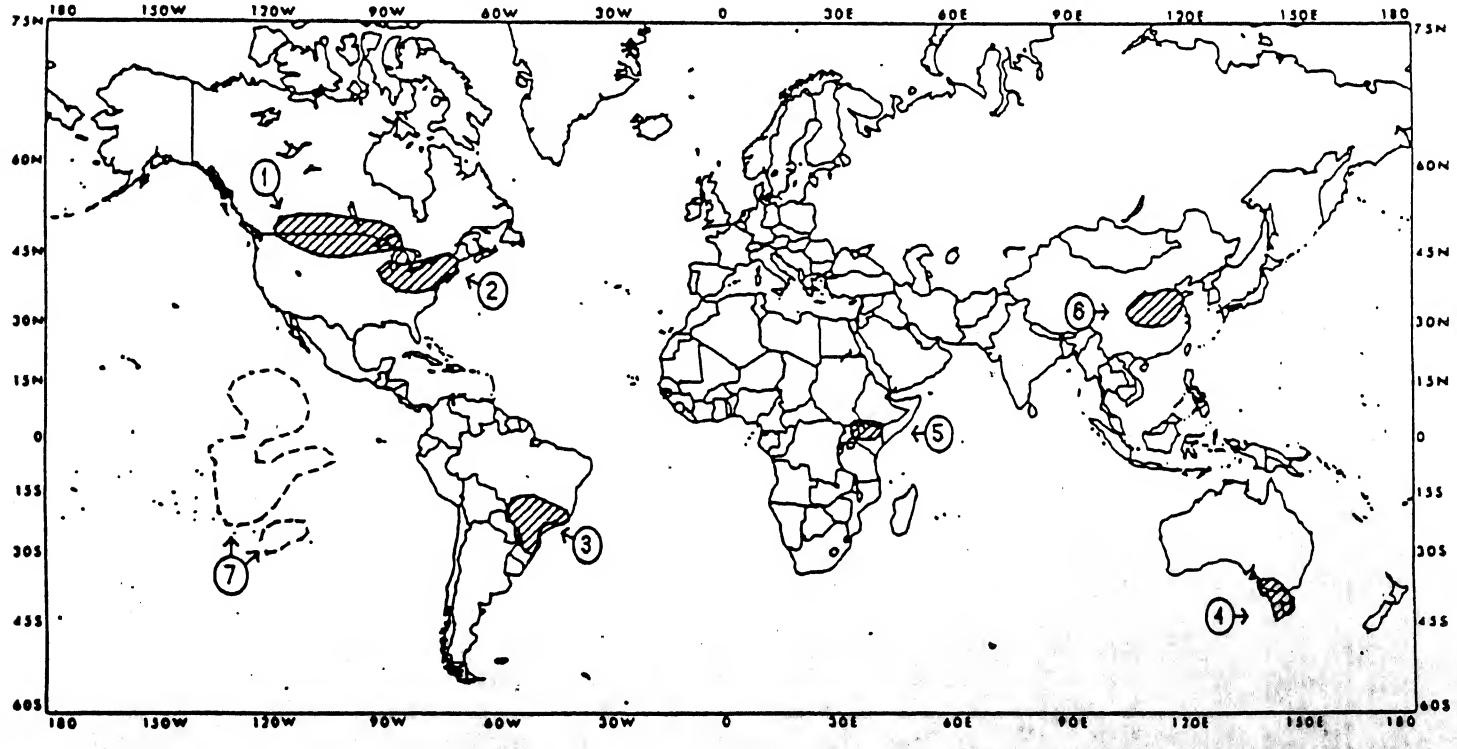
3. Brazil:
TEMPERATURES REMAIN ABOVE NORMAL.
Temperatures reached up to 4.6°C (8.3°F) above normal across much of southern Brazil [8 weeks].

4. Australia:
UNUSUAL WARMTH AGGRAVATES DRYNESS.
Little or no precipitation, 10.0 mm (0.39 inch) or less, along with temperatures up to 4.9°C (8.8°F) above normal were reported in southeastern Australia as the autumn rains have been delayed [7 weeks].

5. Kenya:
HEAVY RAINS CONTINUE.
Heavy precipitation fell in central and western Kenya with amounts up to 184 mm (7.24 inches) recorded at some locations [5 weeks].

6. East Central China:
RAINFALL AMOUNTS WELL BELOW NORMAL.
Precipitation totals generally less than 20.0 mm (0.79 inch) were observed in the region as unusually dry conditions persisted [6 weeks].

7. Central and Eastern Tropical Pacific:
REFER TO MARCH 1988 EL NINO/SOUTHERN OSCILLATION (ENSO) ADVISORY.
The areas of positive sea surface temperature anomalies above 1°C (1.8°F) have greatly diminished over the past few months. Regions above 1°C (1.8°F) during March 1988 are outlined.



Approximate locations of the major anomalies and events described above are shown on this map. See the other world maps in this Bulletin for current two-week temperature anomalies, four-week precipitation anomalies, and (occasionally) longer-term anomalies.

U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK OF APRIL 24 THROUGH APRIL 30, 1988

A slow moving storm system brought moderate to heavy precipitation throughout much of New England as amounts greater than one and a half inches were common from New Jersey and northern Pennsylvania northward into Maine (see Table 1). Farther south, strong thunderstorms dropped heavy rains in eastern Georgia and Florida and along the Gulf Coast regions of Louisiana and Texas. Scattered locations in the central Great Plains, Pacific Northwest, southeastern Alaska, and Hawaiian Islands also measured moderate to heavy totals. Light to moderate amounts occurred in the Pacific Northwest, the northern Rockies, the central and southern Great Plains, from Iowa eastwards to Delaware, along the Gulf Coast, in Georgia and Florida, and in the mid-Atlantic and New England regions. Much of the Southwest and Great Basin, southern Rockies, northern Great Plains and upper Midwest, and parts of the Southeast and Ohio Valley reported little or no precipitation. The continued lack of significant precipitation since the start of Spring has created unusually dry conditions in the northern Great Plains, upper Midwest, and southern Canada (see Special Climate Summary).

Cooler weather persisted in the central and eastern U.S. for the third consecutive week. Greatest departures below normal (-7 to -10°F) were located in the Ohio Valley and central Appalachians (see Table 2). A few stations in the northern Rockies, central Great Plains, and Southeast established daily record minimum temperatures. In the West, much of California and the northern Rockies averaged slightly below normal. Near to slightly above normal temperatures were confined to the northern Great Plains and upper Midwest, from coastal Washington and Oregon southeastwards into New Mexico and Arizona, and in the southern portions of Texas and Florida. A few stations in the southern halves of Florida, Louisiana, and Texas set daily record high temperatures early in the week. Unusually mild conditions continued throughout Alaska as departures up to +15°F were reported in the western half of the state (see Table 3).

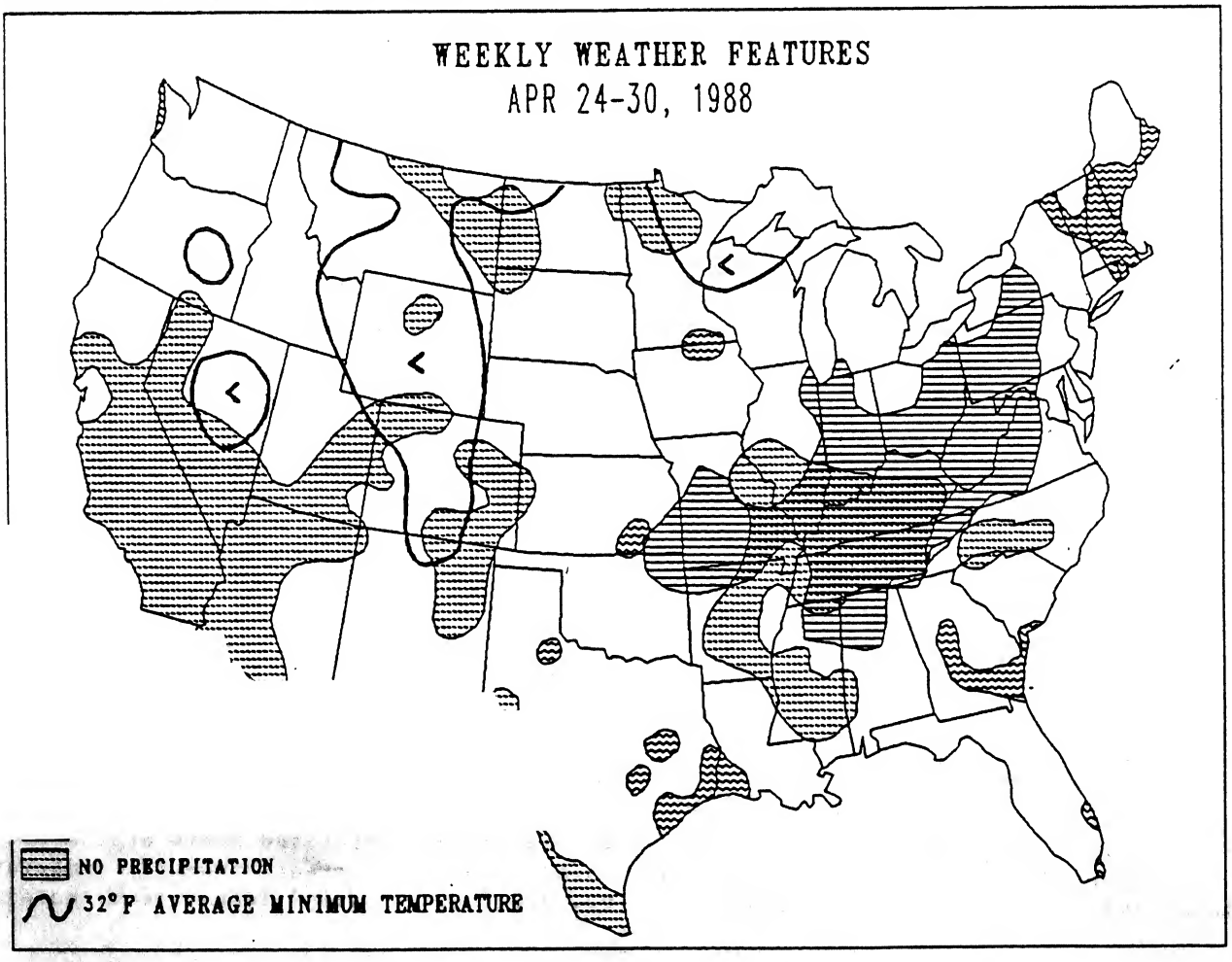


TABLE 1. Selected stations with more than two inches of precipitation for the week.

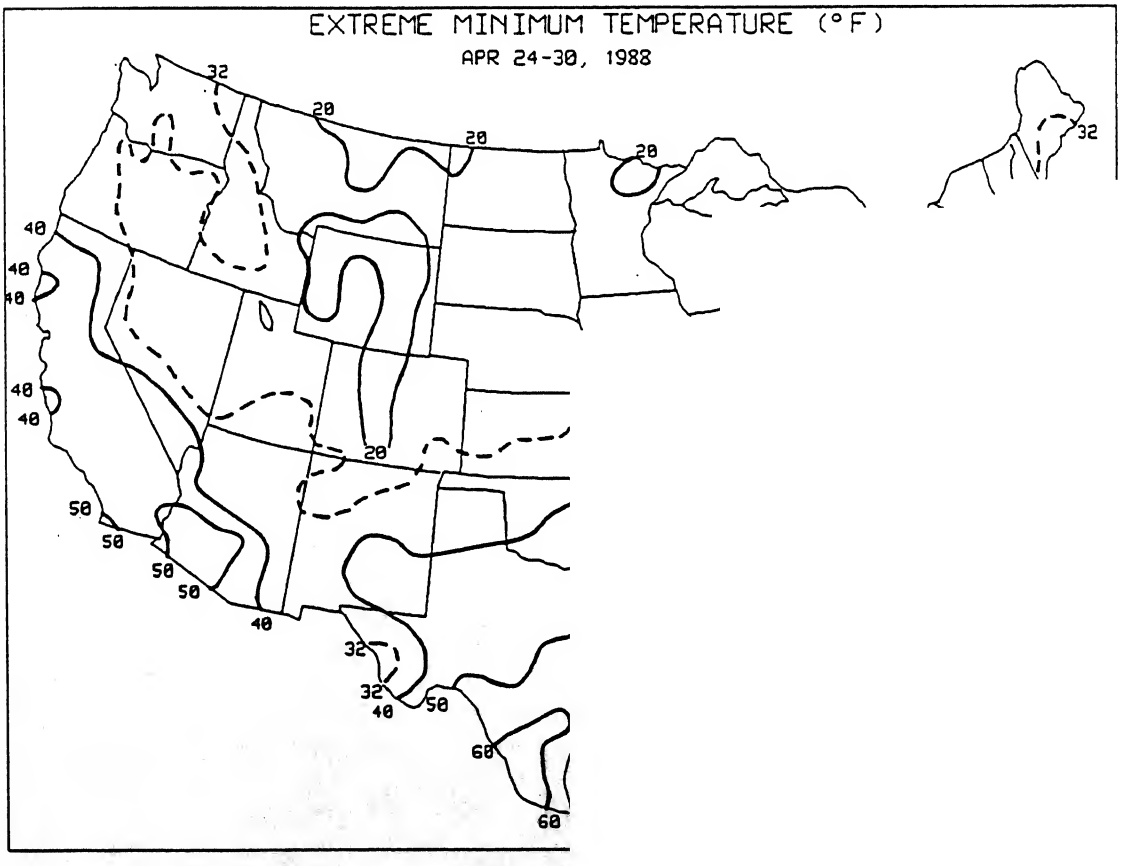
Yakutat, AK	7.70	Wichita/McConnell AFB, KS	2.27
Mt. Washington, NH	7.42	Plattsburgh AFB, NY	2.25
West Palm Beach, FL	3.62	Portsmouth, NH	2.24
Quillayute, WA	3.46	Worcester, MA	2.19
Jacksonville, FL	2.85	Lebanon, NH	2.18
Hilo, HI	2.84	Mason City, IA	2.14
Providence, RI	2.67	Palacios, TX	2.11
Cordova, AK	2.51	Concord, NH	2.10
Brunswick, GA	2.43	Eastport, ME	2.06
Beaumont, TX	2.42	Portland, ME	2.03
Brunswick NAS, ME	2.34	Glens Falls, NY	2.03
Lake Charles, LA	2.31	Augusta, ME	2.01

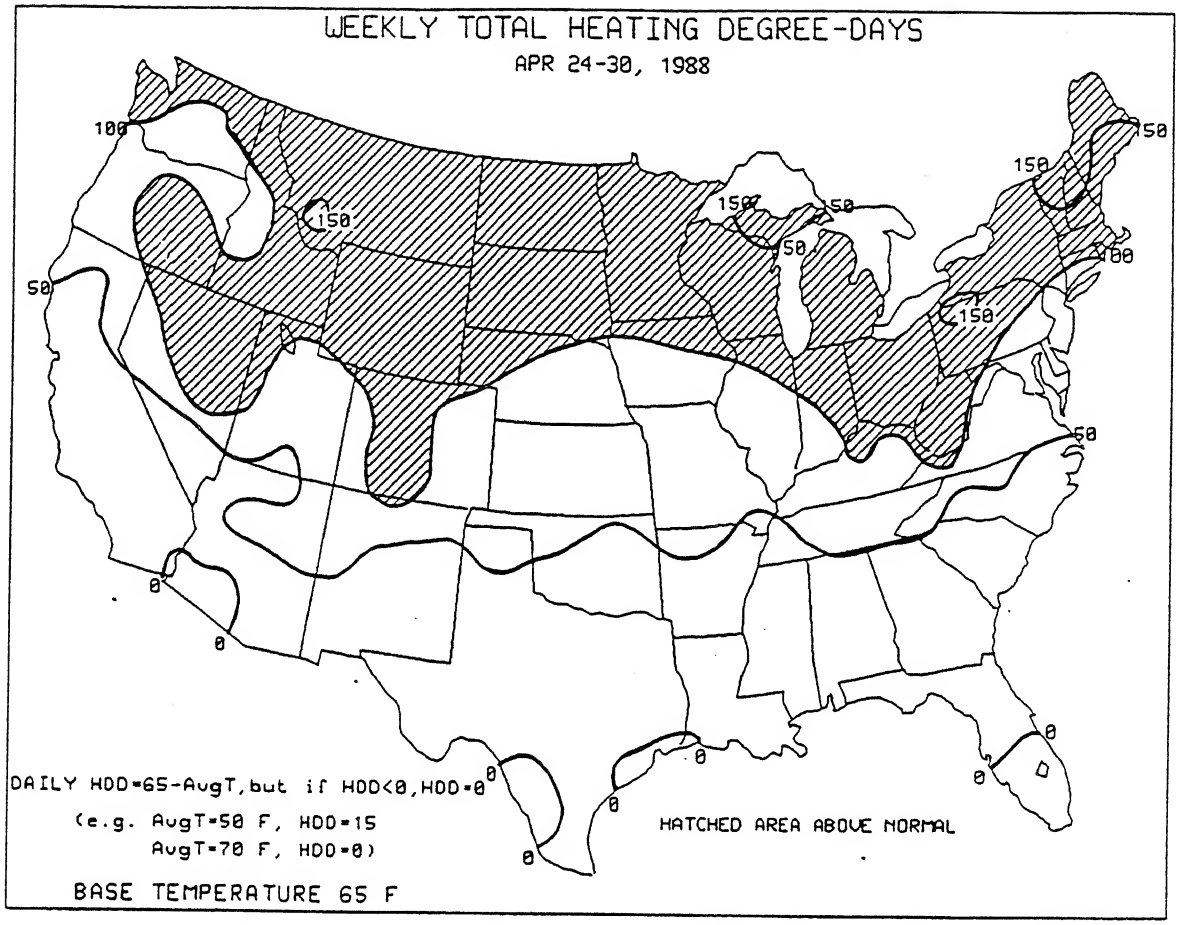
TABLE 2. Selected stations with temperatures averaging greater than 6°F BELOW normal for the week.

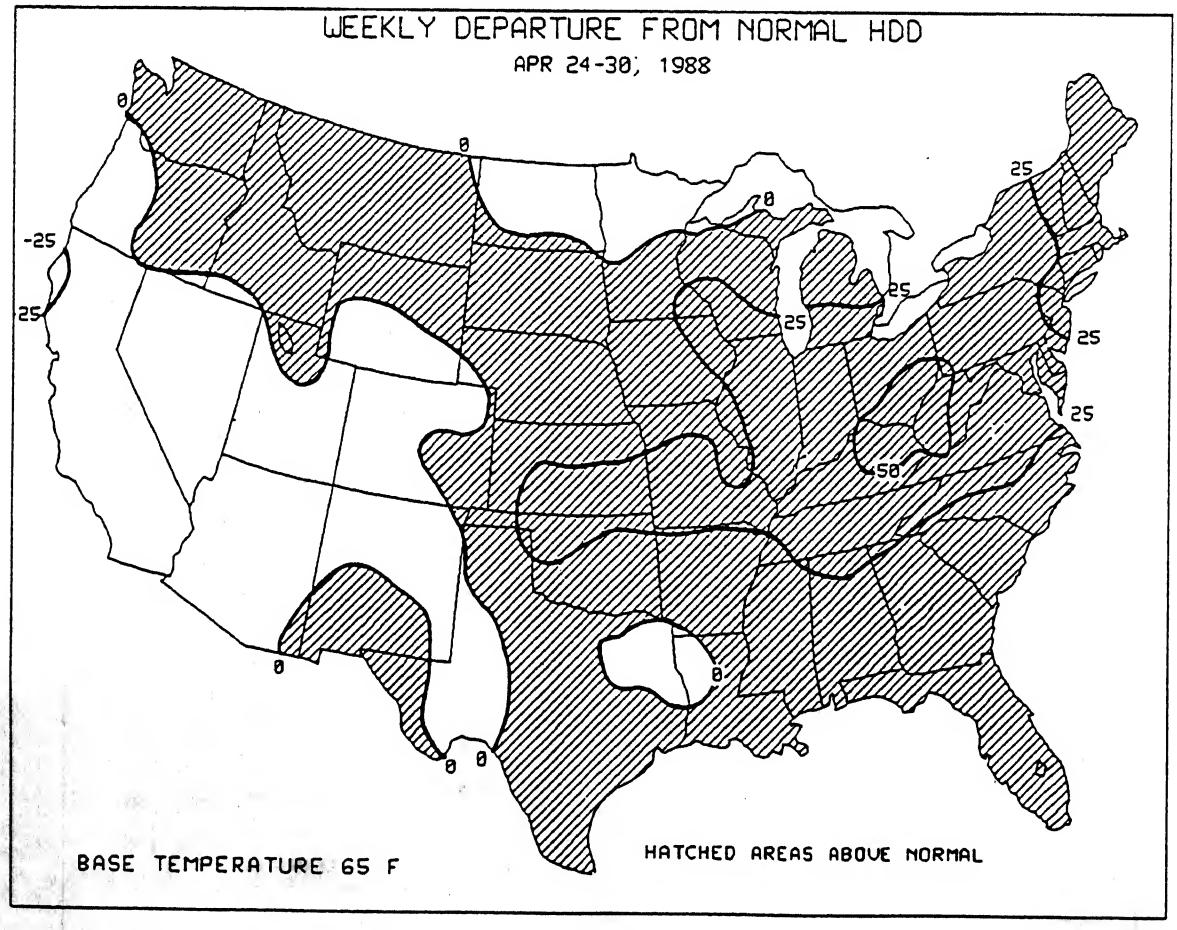
Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Lexington, KY	-10	50	Medicine Lodge, KS	- 7	55
Nashville, TN	- 9	54	Paducah, KY	- 7	55
Huntington, WV	- 9	51	West Plains, MO	- 7	54
Evansville, IN	- 9	52	Mansfield, OH	- 7	46
Cincinnati, OH	- 9	49	Ft. Sill, OK	- 7	58
Charleston, WV	- 9	50	Altoona, PA	- 7	47
Indianapolis, IN	- 8	49	Bristol, TN	- 7	53
Akron/Canton, OH	- 8	45	Huntsville, AL	- 7	58
Columbus, OH	- 8	48	Fayetteville, AR	- 7	55
Bluefield, WV	- 8	49	South Bend, IN	- 7	47
Parkersburg, WV	- 8	50	Louisville, KY	- 7	54
Bowling Green, KY	- 8	53	Poplar Bluff, MO	- 7	56
Pittsburgh, PA	- 8	47	Rochester, NY	- 7	44
Knoxville, TN	- 8	55	Dayton, OH	- 7	49
Beckley, WV	- 8	48	Youngstown, OH	- 7	46
Birmingham, AL	- 7	59	Gage, OK	- 7	55
Muscle Shoals, AL	- 7	58	Morganstown, WV	- 7	49
Chicago/Midway, IL	- 7	48			

TABLE 3. Selected stations with temperatures averaging greater than 4°F ABOVE normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Kotzebue, AK	+15	36	Fairbanks, AK	+ 7	46
Nome, AK	+12	37	Barrow, AK.	+ 6	13
Unalakleet, AK	+11	40	Northway, AK	+ 6	42
Big Delta, AK	+ 8	46	Aniak, AK	+ 5	39
Barter Island, AK	+ 8	16	Bethel, AK	+ 5	36
Bettles, AK	+ 7	39	McGrath, AK	+ 5	40

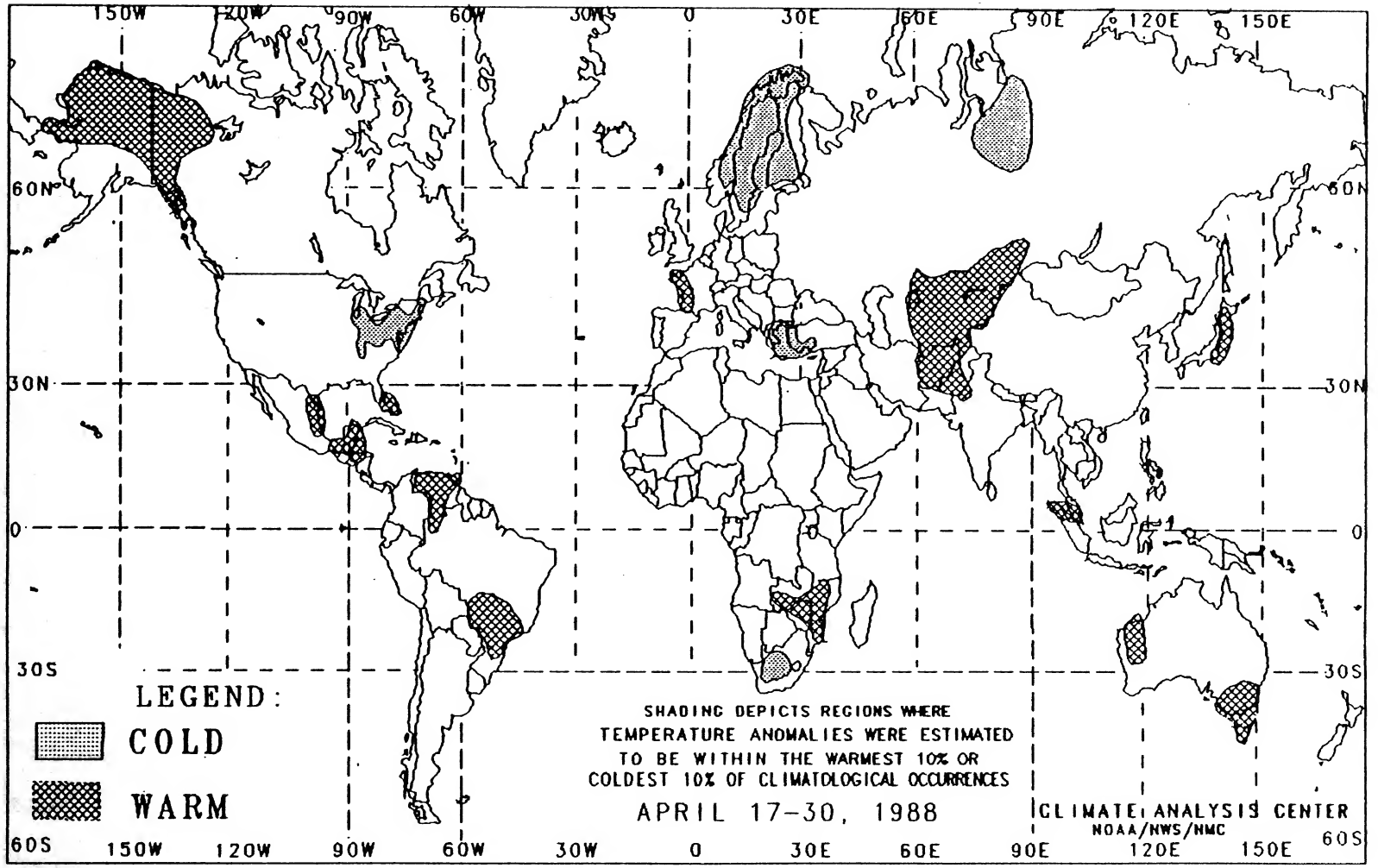



WEEKLY TOTAL HEATING DEGREE-DAYS
APR 24-30, 1988
100
150
50
0
DAILY HDD=65-AvgT, but if HDD<0, HDD=0
(e.g. AvgT=50 F, HDD=15
AvgT=70 F, HDD=0)
BASE TEMPERATURE 65 F
HATCHED AREA ABOVE NORMAL


WEEKLY DEPARTURE FROM NORMAL HDD
APR 24-30, 1988
0
-25
25
50
BASE TEMPERATURE 65 F
HATCHED AREAS ABOVE NORMAL

GLOBAL TEMPERATURE ANOMALIES

2 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resultad in an overestimation of the extent of some warm anomalies.

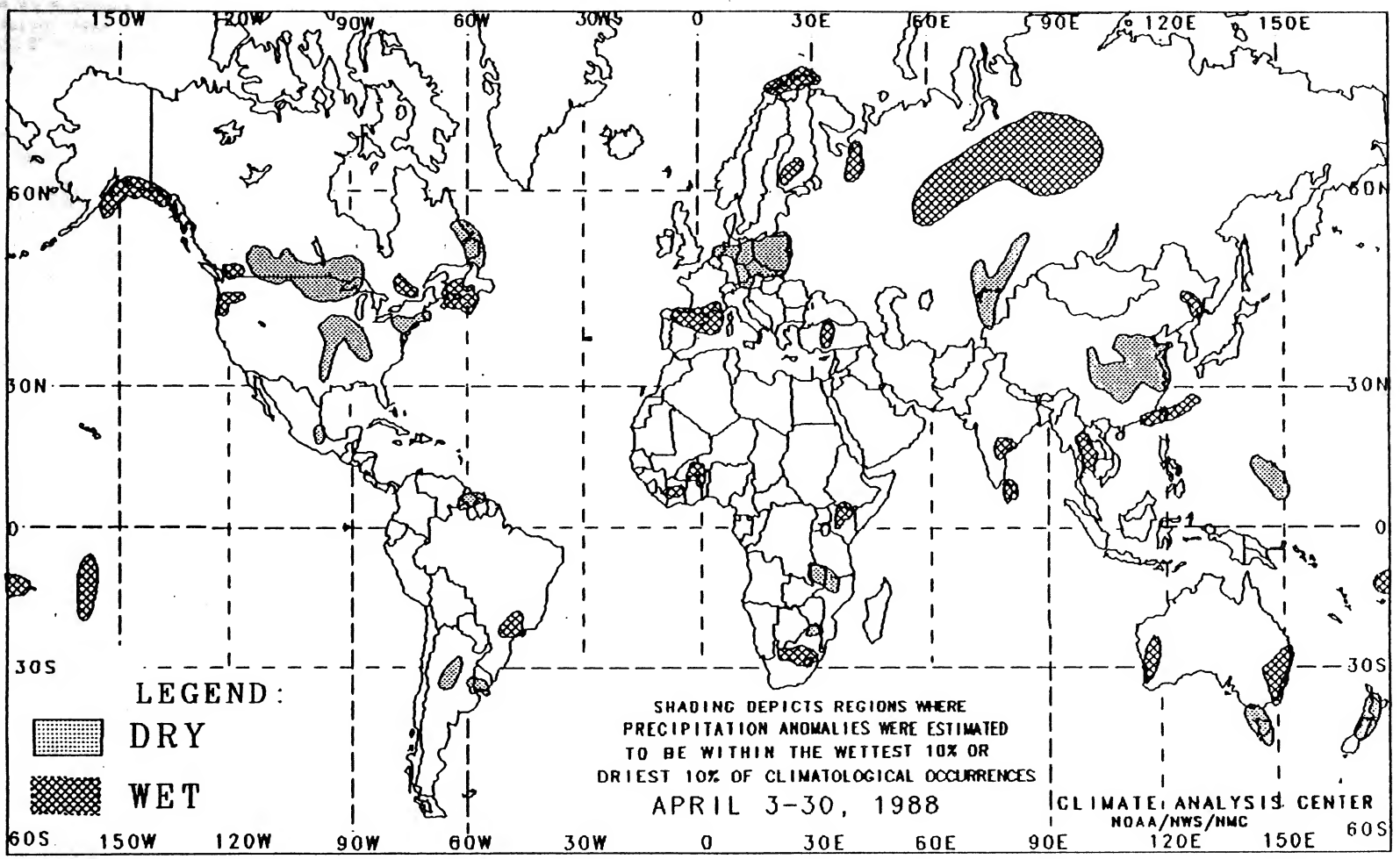
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining precentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

GLOBAL PRECIPITATION ANOMALIES

4 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

SPECIAL CLIMATE SUMMARY

Climate Analysis Center, NMC
National Weather Service, NOAA

ABNORMALLY DRY CONDITIONS HAVE PERSISTED IN THE NORTHERN GREAT PLAINS, UPPER MIDWEST, AND SOUTHERN CANADA FOR THE LAST SEVEN WEEKS

Normally, the winter months of December, January, and February are the driest time of the year in the northern Great Plains, upper Midwest, and southern Canada. Monthly precipitation totals usually average under an inch, and this Winter was no exception as most stations recorded well under three inches. However, in the spring and summer, wetter weather usually develops in the region and normal monthly precipitation ranges between two and three inches, with the maximum in the west during May or June and in the east during June or July.

Since the beginning of Spring (March 20), precipitation totals have been rather meager (see Figure 1). Amounts of less than a half-inch are common in sections of southern Canada and the northern Great Plains, with some stations reporting a trace or no precipitation. As a result, a large area of less than 50% of normal precipitation covers much of south-central Canada and the north-central U.S. (see front cover).

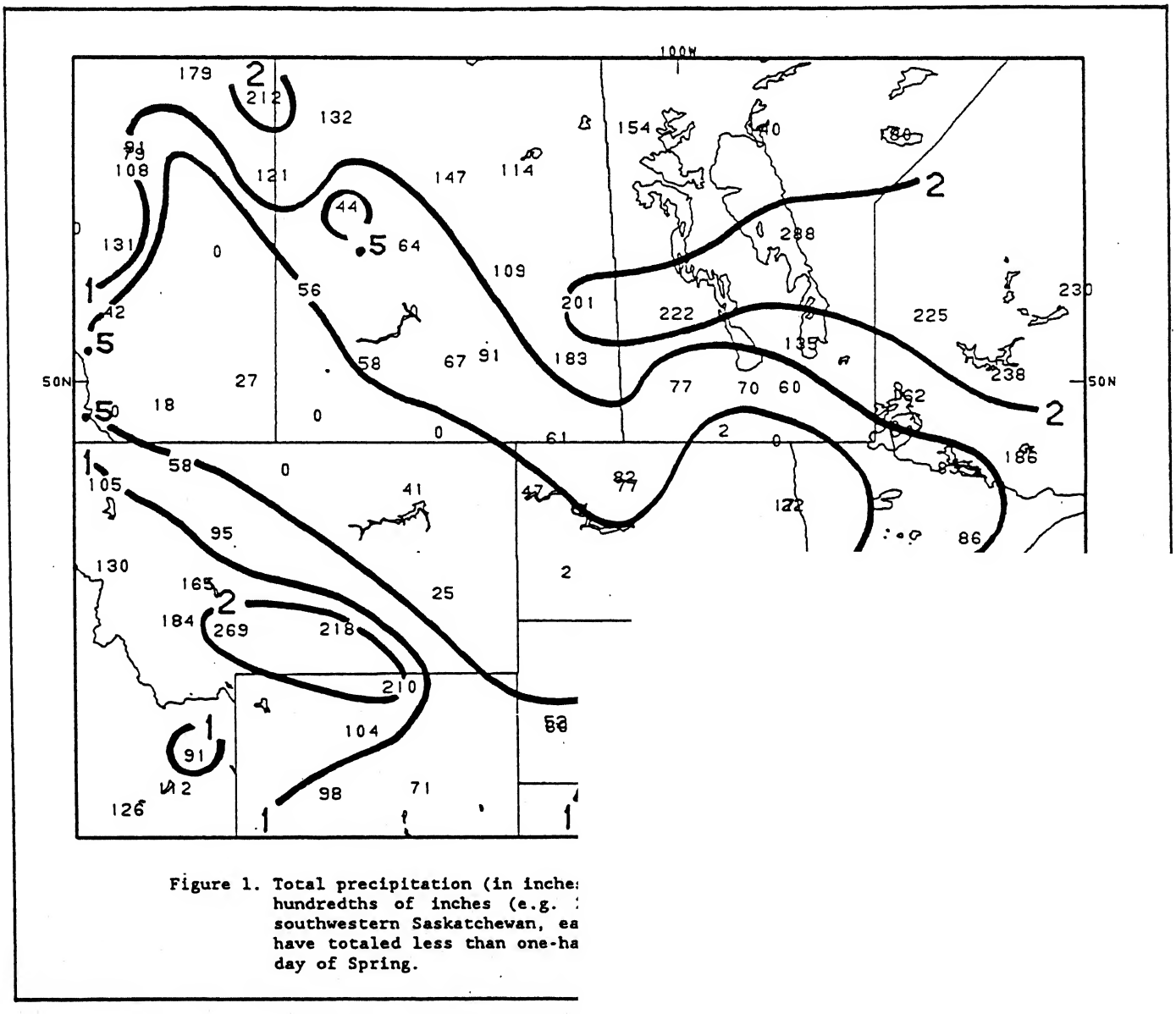


Figure 1. Total precipitation (in inches
hundredths of inches (e.g.
southwestern Saskatchewan, ea
have totaled less than one-ha
day of Spring.

Spring precipitation deficiencies between one and two inches prevail across much of the same region, with the largest departures below normal (over two inches) observed in the Dakotas (see Figure 2). According to the Palmer (Long-Term) Drought Index (PDI) for the week ending April 30 (figures not shown), most state climate divisions in Minnesota, the Dakotas, and Montana have negative (dry) PDI values. The largest negative indices are located in central and northwestern Minnesota (-3.6 to -4.1), northwestern and southeastern North Dakota (-3.4 to -3.8), northeastern South Dakota (-4.4), and western Montana (-3.4 to -4.6), indicating either severe or extreme drought conditions (refer to the Weekly Climate Bulletin No. 88/13 dated 3/26/88 for an explanation of the PDI). This stipulates that additional precipitation amounts of 5-7, 4-5, 8, and 4-6 inches, respectively, are needed to bring the PDI near zero (normal soil moisture conditions).

Since the growing season has begun or is about to begin in the area, and the normal increase in springtime precipitation has not yet developed, an excess of rainfall in the late Spring or early Summer will be needed in order to eliminate both short and long term moisture deficiencies, especially in the wheat producing regions.

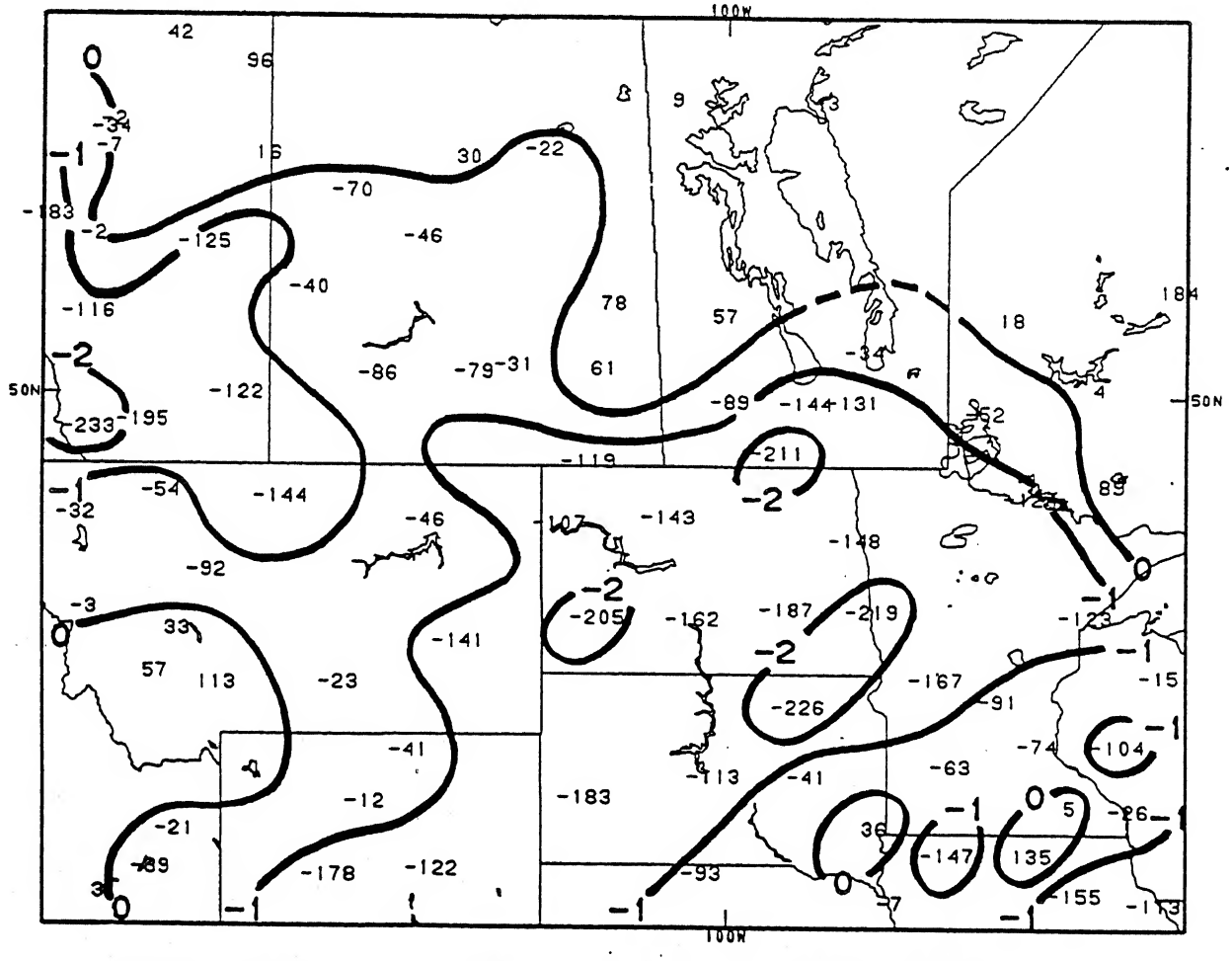


Figure 2. Departure from normal precipitation (in inches) since March 20. Station values are in hundredths of inches (e.g. -219 = -2.19 inches). Deficiencies are generally under two inches in the driest locations (see front cover), but as Summer approaches and the daily normal precipitation amounts increase, accumulated departures below normal will rapidly enlarge with the lack of precipitation.